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ABSTRACT

This study is the 10th in a series of reports from the Reading-to-Write Project, a collaborative study designed to examine the cognitive processes of college freshmen in the act of entering a university-level academic discourse community and to present a model of that transition. Subjects, 17 freshmen (of a total of 72 participating either as controls or as experimental subjects), had their think-aloud protocols recorded and were interviewed concerning their approaches to writing. The report presents a conceptual framework for understanding how freshmen deal with academic writing as a cognitive and social process, but explicitly rejects the "deficit model" (in which students are presumed to lack basic writing skills) and the more traditional staged developmental model in favor of a more contextualized, more strategic picture. The report also examines one set of strategies students used to construct an organizing idea. Implications are that cognitive and social forces may be working together against students adapting and extending the processes they already use in order to enter the more sophisticated academic discourse community. (Two figures are included and the Reading-to-Write study reference list are attached.) (RS)

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Technical Report No. 29

NEGOTIATING ACADEMIC DISCOURSE

(Reading-to-Write Report No. 10)

Linda Flower

May, 1989

This Report will appear as a chapter in *Reading-to-Write: Exploring a Cognitive and Social Process*, by Linda Flower, Victoria Stein, John Ackerman, Margaret J. Kantz, Kathleen McCormick, and Wayne C. Peck, to be published by Oxford University Press. An overview of the Study to which this Report refers can be found in CSW Technical Report No. 21, *Studying Cognition in Context: Introduction to the Study*.

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Preface to the Reading-to-Write Reports

> So I'm just gonna--I don't care, I'm just going to interpret them the only way I can interpret them. . . . Let's just put what the authors agreed on. *Authors agree* -- We'll just -- If at least two of them concur, we'll say they agree. *Authors in general agree that*. . . . But then they don't agree -- There's nothing you can say about this. . . .
>
> Can I leave it at that. . . . Oh give me a break, I don't know what I'm doing. I'm only a freshman. I have no idea what to do.
>
> Darlene, a first-semester freshman

Darlene's college assignment asked for synthesis and interpretation. The paper she turned in--a short, simplistic review of material from her sources--failed to meet her own expectations and her readers'. And yet, a chance to look at the process behind this unsophisticated product revealed serious thinking, a complicated, if confused, decision process, and a trail of unused abilities and discarded ideas--an active encounter with academic discourse that her teacher would never see.

The study presented here takes an unusually comprehensive look at one critical point of entry into academic performance. It shows a group of freshmen in the transition into the academic discourse of college, looking at the ways in which they interpret and negotiate an assignment that calls for reading to write. On such tasks, students are reading in order to create a *text* of their own, trying to integrate information from sources with *ideas* of their own, and attempting to do so under the guidance of a *purpose* they must themselves create. Because these reading-to-write tasks ask students to integrate reading, writing, and rhetorical purpose, they open a door to critical literacy. Yet this same interaction often makes reading-to-write a difficult process for students to learn and to manage.

In order to get a rounded picture of cognition in this academic context, the study looks at the thinking processes of these students from a number of perspectives, drawing on think-aloud protocols of students writing and revising, on interviews with and self-analyses by the students, and on comparisons of teachers' and students' perceptions of texts the students wrote. It attempts to place these observations within a broader contextual analysis of the situation as students saw it and the social and cultural assumptions about schooling they brought with them.

What this study revealed were some radical differences in how individual students represent an academic writing task to themselves--differences which teachers might interpret as a simple indication of a student's ability rather than a student's interpretation of the task. The students were often unaware that such alternative representations existed or that they might hold such significance. Some images of the task, for instance, such as those dominated by the goals of comprehension, summary, and simple response, offered little or no place for critical response, original synthesis, or interpretation for a rhetorical purpose.

The reading-to-write task students imagined for themselves also had a direct effect on performance: it affected the goals they set, the strategies they used, and the

ways they solved problems during composing. And it led to differences in teachers' evaluations of the texts--although, this study suggested, these evaluations may confuse the conventions of organization (e.g., use of topic sentences) with the writer's control of ideas. When students began to examine their options and attempt the more demanding task of interpreting for a purpose, certain students, whom we called the Intenders, showed important changes in their writing and thinking process. These changes, however, were not evident in the text and nor apparent to teachers. Finally, this study showed how students' images of the task were rooted in the students' histories, the context of schooling, and cultural assumptions about writing which they brought to college.

It is not surprising to find that some of the images students bring with them are at odds with the expectations they encounter at a university. However, when the expectations for "college-level" discourse are presented in oblique and indirect ways, the transition students face may be a *masked* transition. That is, the task has changed, but for a number of reasons, the magnitude and real nature of this change may not be apparent to students, even as they fail to meet the university's expectations.

One of the key implications of this study is that reading-to-write is a task with more faces and a process with more demands than we have realized. We see students thinking hard and doing smart things, even when they misgauge their goals or their written text fails to meet certain standards. This close survey of the cognitive and social landscape of reading-to-write in a college class gives one added respect for the students in this transition and for the complexity and sophistication of the "freshman" task as they face it.

The Reading-to-Write Project was carried out as a collaborative effort at the Center for the Study of Writing, at Carnegie Mellon. We designed the study to create a range of alternative perspectives on the process of reading-to-write and on the way cognition is shaped by the social context of school. The following technical reports present the design and collaborative history of the study; analyses of the cognitive processes we observed, of the texts, and of students' perceptions of both; and a set of conclusions, from different theoretical perspectives, on how students manage this entry into academic discourse:

Reading-to-Write Report 1.
(CSW Tech. Report 21)

Studying Cognition in Context: Introduction to the Study.
Linda Flower

Reading-to-write is an act of critical literacy central to much of academic discourse. This project, divided into an Exploratory Study and a Teaching Study, examines the cognitive processes of reading-to-write as they are embedded in the social context of a college course.

Reading-to-Write Report 2.
(CSW Tech. Report 6)

The Role of Task Representation in Reading-to-Write.
Linda Flower

The different ways in which students represented a "standard" reading-to-write task to themselves led to marked differences in students' goals and strategies as well as their organizing plans. This raised questions about the costs and benefits of these alternative representations and about students' metacognitive control of their own reading and writing processes.

Reading-to-Write Report 3. **(CSW Tech. Report 22)**

Promises of Coherence, Weak Content, and Strong Organization: An Analysis of the Student Texts.
Margaret J. Kantz

Analysis of students' Organizing Plans (including free response, summary, review and comment, synthesis, and interpretation for a rhetorical purpose) also revealed a hybrid plan in which certain coherence conventions gave the promise of synthesis while the paper's substance reflected a simpler review and comment strategy. Both students and teachers, it appeared, may sometimes confuse coherence strategies (for text) with knowledge transformation strategies (for content).

Reading-to-Write Report 4. **(CSW Tech. Report 23)**

Students' Self-Analyses and Judges' Perceptions: Where Do They Agree?
John Ackerman

Any writing assignment is a negotiation between a teacher's expectations and a student's representation of the task. Students' Self-Analysis Checklists showed a strong shift in perception for students in the experimental training condition, but a tellingly low agreement with judges' perceptions of the texts.

Reading-to-Write Report 5. **(CSW Tech. Report 24)**

Exploring the Cognition of Reading-to-Write.
Victoria Stein.

A comparison of the protocols of 36 students showed differences in ways students monitored their comprehension, elaborated, structured the reading and planned their texts. A study of these patterns of cognition and case studies of selected students revealed both some successful and some problematic strategies students brought to this reading-to-write task.

Reading-to-Write Report 6. **(CSW Tech. Report 25)**

Elaboration: Using What You Know.
Victoria Stein

The process of elaboration allowed students to use prior knowledge not only for comprehension and critical thinking, but also for structuring and planning their papers. However, much of this valuable thinking failed to be transferred into students' papers.

Reading-to-Write Report 7. **(CSW Tech. Report 26)**

The Effects of Prompts Upon Revision: A Glimpse of the Gap between Planning and Performance.
Wayne C. Peck

Students who were introduced to the options of task representation and prompted to attempt the difficult task of "interpreting for a purpose of one's own" on revision were far more likely to change their organizing plan than students prompted merely to revise to "make the text better." However, the protocols also revealed a significant group of students we called "Intenders" who, for various reasons, made plans they were unable to translate into text.

Reading-to-Write Report 8. **Translating Context into Action.**
(CSW Tech. Report 27) **John Ackerman**

One context for writing is the student's history of schooling including high school assignments and essays. Based on protocols, texts, and interviews, this report describes a set of "initial reading strategies" nearly every freshman used to begin the task--strategies that appear to reflect their training in summarization and recitation of information. From this limited and often unexamined starting point, students then had to construct a solution path which either clung to, modified, or rejected this a-rhetorical initial approach to reading and writing.

Reading-to-Write Report 9. **The Cultural Imperatives Underlying**
(CSW Tech. Report 28) **Cognitive Acts.**
Kathleen McCormick

By setting reading-to-write in a broad cultural context we explore some of the cultural imperatives that might underlie particular cognitive acts. Protocols and interviews suggest that three culturally-based attitudes played a role in this task: the desire for closure, a belief in objectivity, and a refusal to write about perceived contradictions.

Reading-to-Write Report 10. **Negotiating Academic Discourse.**
(CSW Tech. Report 29) **Linda Flower**

Entering an academic discourse community is both a cognitive and social process guided by strategic knowledge, that is, by the goals writers set based on their reading of the context, by the strategies they invoke, and by their awareness of both these processes. As students move from a process based on comprehension and response to a more fully rhetorical, constructive process, they must embed old strategies within new goals, new readings of the rhetorical situation. However, for both social and cognitive reasons, this process of negotiation and change that academic discourse communities expect may not be apparent to many students for whom this becomes a confusing and tacit transition.

Reading-to-Write Report 11. **Expanding the Repertoire: An**
(CSW Tech. Report 30) **Anthology of Practical Approaches**
for the Teaching of Writing.
Kathleen McCormick *et al.*

One important implication of this entire study is that students themselves should come into the act of examining their own reading and writing processes and becoming more aware of cognitive and cultural implications of their choices. This set of classroom approaches, written by teachers collaborating on a Reading-to-Write course that grew out of this project, introduces students to ways of exploring their assumptions and alternative ways of represent aspects of the task.

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NEGOTIATING ACADEMIC DISCOURSE

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A CONCEPTUAL FRAMEWORK

In many ways this study is the story of students' success. It is a study of writers in the act of entering a university-level academic discourse, who come with an impressive range of abilities that are fundamental to academic writing: the ability to summarize, to get the gist, to see key points and connections, and not least, to execute moves that make an essay seem coherent and on topic. The interviews and protocols show students who are also working and struggling with this assignment, wanting to appear smart, trying to say something "interesting," wanting this paper to show what they can do. Yet, despite their effort, these typical freshmen papers still fall short of the critical and creative thought we expect in academic writing. These students, like most freshmen, are in an important transition--there is another river to cross. The problem is how to characterize this transition.

A deficit model, in which students are presumed still to lack basic "cognitive skills," to be unable to think "analytically" or "critically" or to be still in some "egocentric" state of intellectual development is emphatically denied by our data. Such a model has been criticized by other educators who see students sadly pigeonholed when we conclude that students "can't think" in certain ways because certain school tasks fail to elicit the evidence of such abilities (Rose, 1988). Our interviews and protocols of students in the act of planning, elaborating, and intending echo Labov's (1972) compelling picture of street-wise verbal intelligence, in the way they show ample evidence of savvy, reasoning, and sensitivity to conflict, as well as confusion over how to negotiate this new situation. When a large group of students is assumed to labor under a basic intellectual or basic cognitive deficit due to some limit in performance, we may need to ask how much of that deficit is residing instead in our own methods of measurement and observation (see Flower, Introduction, Report 1).

A traditional, staged developmental model may miss the mark as well. We do not see compelling evidence that this particular transition into academic discourse takes a linear developmental path marked by distinct stages of growth. These freshmen do not appear to be climbing up the ladder implied by a "taxonomy of intellectual skills," up the steps of "cultural literacy," up the "great chain of being," or up other step-wise value systems we academics love to create. Doing academic writing, for all its virtues, does not appear to be a necessary stage in the unfolding of the literate mind or to require the addition of missing cognitive capacities. In the next few pages I will sketch some of the elements that point to more contextualized, more strategic picture of this transition.

Entering a Discourse. A more accurate conceptual framework, we believe, is one which sees this freshman transition as at once a social and cognitive event, in which students are attempting to ***enter a new discourse community posed by college*** and, more particularly, by this freshman composition class. To enter such a community, students need to learn the textual conventions, the expectations, the habits of mind, and methods of thought that allow one to operate in an academic conversation. And, in some cases, they will need to learn a body of topic knowledge as

Reading-to-Write and Critical Literacy

Why study reading-to-write? Reading in order to write is inextricably bound up with schooling. In practical terms it is the task we most associate with college-level work whether in English, history, fine arts or general science. It is used as a tool to learn, to test learning, and to push students to build beyond their sources. It is also a gate into that higher literacy in which information from a source text is not only understood on it own terms, but is transformed in the hands of the writer. However, the simple activity of reading and writing does not insure that this higher literacy will develop. Applebee's 1981 study, *Writing in the Secondary School,* claims that high schools have developed a limited literacy in which writing is merely a tool for testing recall of content. This impoverished form of reading-to-write encourages consumption of information, not the transformation or use of one's knowledge. Richardson et al's (1983) critique of junior colleges is also directed at the absence of this higher literacy. In his five-year study Richardson documents a leveling-down effect in which institutions abandoned the goal of critical literacy in favor of the narrower goals of socialization and transferring information.

Various alternative forms of literacy are often defined by looking at the ways people use writing. Literacy, as Richardson, Vygotsky, and others have defined it, is not synonymous with being able to read (decode) or write (transcribe) *per se*. Rather it is a "goal-directed, context-specific" behavior, which means that a literate person is able to *use* reading and writing in a transactional sense to achieve some purpose in the world at hand (Richardson et al., p. 4) . We can think of *critical literacy* as adding further specifications to this definition, in the sense that an act of *critical literacy* involves carrying out a particularly demanding set of such goals. In college these goals often include the creation of an analysis, synthesis or original expression in written form. The element of "written form" is important here, since it distinguishes a critically literate performance from critical thinking per se--an ability which does not depend on being literate (Scribner and Cole, 1981).The ability to think with and through written text is a particular art. However, Richardson reminds us, merely practicing the conventional forms of college writing, such as a term paper or essay exam, is not synonymous with an act of critical literacy, even though tradition links the two. One can write a term paper by tying up an endless string of quotes or pass an exam by regurgitation. The real test of critical literacy is the kind of thinking a student is able to do in writing and reading . And reading-to-write, we will suggest, is a litmus test which lets us distinguish between the receptive process of basic literacy and the testing/transforming process of critical literacy.

An operational definition of literacy based on what the literate person does should help make these distinctions and the notion of critical literacy used in this book more clear. At one level literacy means comprehending the rules, procedures and instructions that let people function in society, whether they are reading a road sign, filling out an employment application, or following the job specs on a new order as part of their work at the textile mill. This receptive literacy, with its emphasis on getting information, has also traditionally meant being able to read and understand the Bible, the newspaper or the union news, or, as in the remarkable Nicaraguan literacy campaign, to comprehend (and by implication accept) a new political or religious ideology.

By contrast, *critical* literacy typically means not simply building on but going beyond reception and understanding. Some aspects of critical literacy have what we might call a *questioning and testing emphasis*. The critically literate person questions sources, looks for assumptions, and reads for intentions, not just facts. For educators with this emphasis, critical literacy may also mean coming into political or social consciousness and questioning both authority and the status quo. And it may even mean rising to a reflexive questioning of one's own assumptions and responses as a reader and one's own assumptions and assertions as a writer.

Academic Expectations. But what is ***academic discourse***? Reading this new rhetorical situation and representing the task play such a major role in this transition, as we see it, because the expectations of the academic discourse itself are often tacit. Academic discourse operates with its own peculiar, socially-constructed conventions and norms which liberal education has valorized for their time-tested ability to support reflective thought and build new knowledge. But in acknowledging that potential, we must not assume that these specialized habits of mind and ways of talking that a person *must learn* are a "natural" form, much less a simple indication of ability or intelligence. In fact, we will propose, freshmen whose "legacy of schooling" includes practiced strategies and strong assumptions about school writing (see Reports 2,8, 9), may fail to appreciate the conflict between those prior assumptions and the unstated expectations of an academic discourse community. Even though many freshman are familiar with academic writing from high school, the demand actually to enter a community as a contributing member can require important changes in students' image of writing and sense of authority, as well as changes in their strategies for creating text.

The students' problem is further confounded by the fact that there is no Platonic entity called "academic discourse" which one can define and master. The "academic community" is, if not strife-torn, certainly rife with disciplinary and theoretical disagreement about how arguments should be conducted, about what constitutes good evidence, and about how correctly to format one's bibliography. Scribner and Cole (1981) describe similar problems in the attempts to conceptualize "literacy" as a single entity. They argue for a focus on context-specific literate *practices*, which they define as "recurrent, goal-directed sequence(s) of activities," developed and patterned to use "technology and knowledge to accomplish tasks." Literacy as a whole is the sum of this "set of socially organized practices which make use of a symbol system and a technology for producing and disseminating it" (p. 236). Like them we are in search of a "framework which situates cognitive skills in culturally organized practices [in order to provide] one way of moving beyond the antonymic terms that dominate much thinking about thinking: general versus specific, higher order versus lower order" (p. 259). At the same time, our experience as teachers pressures us to account for the commonalities, for the familiar patterns of success and failure we see in this data.

Academic discourse, even the freshman version of the species, is not the result of a unified cognitive or social process, but is made up of a variety of context-specific practices, some of which, such as the systematic consideration of rival hypotheses, are associated with disciplines and genres. Other practices, such as, analyzing one's own assumptions, are common across disciplines but will be more or less relevant depending on the task at hand. Given this diversity we want to be explicit about the particular expectations we brought to this freshman course and this study and to acknowledge the different priorities other academic microcommunities might set. However, we also want to make an argument for commonality. In this course and our analysis we concentrated on two sets of practices and expectations which we believed many teachers would share, which cut across disciplines, and which we hypothesize may be at the root of other apparent problems students face in negotiating various academic practices. These two practices were 1) integrating information from sources with one's own knowledge and 2) interpreting one's reading/ adapting one's writing for a purpose. From our perspective these two practices stand as critical features of academic discourse which often limit entry and full participation in the academic community. Insofar as other teachers and other rhetorical situations share these goals, our study can be said to be about "academic discourse" more generally and to speak to common problems that cross our multiple communities.

Let me briefly elaborate some of the assumptions and working definitions of academic discourse which helped shape the course and community our students entered. Reading and writing are constructive acts (cf. Flower, 1987; Spivey, 1987). Readers do not simply absorb and store information, they create meaningful interpretations through selective attention, connections to prior knowledge, and evaluation of what they read. On one level, this individual construction of meaning is neither good nor bad; it is merely the nature of this cognitive and social process. However, the ideal reader of academic discourse manages this event in order to build a rich and integrated personal representation of a text (cf. McCormick and Waller, 1987). We expect writers to carry this integrative process even further. People join the academic community by contributing to both a conversation and to a shared body of knowledge (cf. Bazerman, 1985; Kaufer, Geisler, & Neuwirth, in press; and Nelson & Hayes, 1988). They enter the discourse by offering us research, scholarship, and theory. In addition to these finished thoughts, academic discourse also encourages and values writing which presents new ideas, hypotheses and mysteries, issues for negotiation, and thoughtful reflections.

This is not to say that reader/teachers invoke these ideals at every turn, on every paper, but they are part of the unwritten curriculum and unstated criteria that set expectations. Moreover, these ideals embrace conflicting values the writer must balance. Although academic communities prize openness and exploration, their expectations for thoughtful, supported claims are typically high, even for freshman writing. As readers we expect (student) writers not only to recognize and understand other points of view, but to investigate such claims with their own prior knowledge and experience, to think critically. When writers present those ideas, we expect them not only to recount their knowledge, but to adapt, even transform it to address a shared purpose. Student writers must manage the conflicting roles of being at once a learner and a contributor. As partners in an academic discourse, writers are expected to explore questions that matter, to teach us, to surprise us at any opportunity--in essence, to contribute to a serious and energetic conversation. This, we felt, was not an image of school discourse that entering students often possess.

The Transformation of Knowledge. This image of academic discourse as a rhetorical act also assumes that writers often need to transform their knowledge in response to a problem, issue, or purpose. Yet in the school writing studied by Bereiter and Scardamalia (1987) and Applebee (1984a), the shift from knowledge telling to knowledge transforming did not happen easily, if at all. Transformation appears to be a complex cognitive process that is heavily influenced by the plans and goals writers give themselves, while these are in turn highly dependent on the support and incentives for such effort provided by the context. Bazerman's study of the reading process of seven physicists highlights the intensely goal-directed process that leads these academic writers to transform not only the information they read but their own prior knowledge. The researchers he studied work within a socially constructed body of scientific knowledge and current problems. However, in the act of selecting and interpreting what they read, they construct a personal schema of the field built around their own research goals. "The way [they] read is a strategic consequence of what [they are] trying to accomplish" (p.11). In a similar way, when the biologists studied by Meyers revised their proposals, they responded to critics but preserved the original intent of their work by revamping the conceptual framework of their proposals to reflect consensus and common goals (1985a). In essence, they had to rethink and re-present their work from the theoretical perspective of their readers.

Studies of college students suggest some of the specific ways transformation is carried out in reading-to-write, where "knowledge" can include both information from sources and from memory. Looking at the synthesis texts produced by more and less able comprehenders, Spivey found that the better readers not only achieved higher overall quality, but their texts contained fewer, more tightly connected, and fully developed thematic chunks (1984). In constructing meaning from sources, these students had actively *selected*, *connected*, and *organized* information. This same trio of constructive processes accounts for much of the picture that is emerging in modern cognitive research on reading (Spivey,1987). Tracking the reading and writing process through think aloud protocols, Kennedy found that fluent readers were more active in planning and manipulating their sources (by taking, rereading and using their own notes) than less fluent readers (1985). They also engaged more frequently in "higher level processing and study-type" actions during reading (e.g., elaboration, evaluation, marking the text).

However, when Kantz presented students with a more rhetorically complex reading-to-write task, she found that traditionally valued "active" reading strategies did not predict the quality of the paper (1987) or tell the full story of the transformation process. Students in this study were asked to help certain freshmen writers be more "creative," drawing on diverse sources which included Kurt Vonnegut, Ken Macrorie and William Perry. In this open-ended, audience-driven synthesis task, students who engaged in elaborating on and critically evaluating their source texts--but did so *without* a consistent rhetorical purpose behind that of response--did not necessarily write good papers or even use their responses made during reading. Good writing was predicted instead by the extent of planning and by the students' purposeful use of reading strategies which let them select rhetorically relevant information and begin their constructive process as writers even as they read through the sources.

The particular patterns of reading, writing, and knowledge transformation Kantz observed were shaped by the rhetorical stance writers took to their material and audience. Students who, based on their own comments, approached this task as *summarizers* did relatively little manipulation compared to students who saw themselves as *explicators* of their sources for a student audience. In this study transformation not only led to radical decisions about what to select, jettison, and how to organize it, but also led writers to draw inferences and see implications in order to adapt their personal experiences and the source information for a hard-to-impress reader. Once again, the goals writers set and the task they give themselves emerged as a powerful influence on both the process and the text.

Sometimes, however, the decision *not* to transform information may also reflect what the student feels able to do. Although the sophomore literature student observed by Herrington (in press) had been asked to write an "argument" about an "issue," she apparently "perceived an 'interesting issue' to be something that interested her and that she didn't understand"--a mismatch with the instructor's goals (p. 158 [note, need non-ms. page numbers here••]). By the second paper, the student perceived "proving a point" to be her purpose; however, her paper remained a descriptive summary reflecting a writer "trying to figure out a story for herself, exploring her ideas, and admitting to her . . . professor, what she doesn't understand" (p. 160). As Herrington concludes, this student probably needed more "guidance as to *how* to go about formulating an issue and working out an interpretation to resolve it " (p. 160). In support, Graff has argued that our teaching of literature may even tend to suppress this awareness of contradictions and issues (1985). His image of the "guidance" that might lead to transformed knowledge is a social one: students would be plunged into the cultural context of literary theory and its debates--a context in which issues of interpretation become meaningful.

When Nelson and Hayes tracked students from different courses over the extended process of writing a research paper they found some behavorial indicators of how knowledge gets transformed and what conditions do support it (1988). Some students approached the paper with a low investment strategy guided by a content-driven search for information. Starting 2 -3 days before the paper was due, they did their research in one visit to the library, based on a random search of books on the topic. Copying down quotes and paraphrases from books in the order found in the sources, they subsequently incorporated that information directly, in much the same order, in their own papers. Other students took a high investment, and issue-driven writing and search strategy. Starting 3-4 weeks in advance, they began with questions, hypotheses, or at least an intent to find an issue, which guided their multiple trips to the library. They did reading for background and took notes not intended for the final text. Their revisions reflected conceptual and well as textual changes. They also felt good about the work. These work patterns suggest some of the conditions that support or work against the transformation of knowledge. This study also suggests ways the context of academic writing, whether in a class or a community of physicists, supports these work habits by encouraging planning, drafts, reflection, and public presentation.

Growth as a Process of Adaptation and Negotiation

If the goal of the freshman transition is to begin performing with confidence within a shared discourse that may call for the transformation of knowledge, what does it take to get there? David Bartholomae's study of underprepared students used the metaphor of "initiation" to capture the outsider status students may feel (1985). It described this transition as a social process of "imitation"--picking up the commonplaces of thought and the conventions of text that go with the territory. Our view is a complementary one that emphasizes the *insider* status students also possess--the important legacy of schooling and academic know-how they bring to college. Entering this partly new discourse appears to be an act of negotiation that involves a good deal of experimentation and discovery, uncertainty and failure, success and growth. It also involves adapting old strategies and retuning and reinterpreting old understandings to meet this new situation.

Some recent case studies of academic writers help us sketch some of the specific literate practices called for in different academic settings, practices that range from developing a formal proposal for biological research to writing an interpretive paper in a poetry course. These studies emphasize the distinctiveness of each practice, but together they help us picture the larger strategic repertoire students are developing in these courses. This repertoire includes not only text conventions, rhetorical patterns, and domain-specific organizing ideas, but also strategies for reading and writing and (in some cases) meta-level strategies for interpreting what these different discourses expect. "Learning to write" in these studies often involves negotiating a transition from one discourse (e.g., from writing personal essays in freshman comp) to another discourse (e.g., to writing literary analyses in sophomore poetry). The student's task is to interpret this change.

For instance, when Herrington's chemical engineering students moved from a lab course to a design course, they had to move from what she described as a school-based forum and argumentative rhetoric (in which claims and warrants were based on technical theory and accuracy), to a professional forum that called for deliberative rhetoric (in which reasons were based on expediency and advantages to the client audience) (1985). The change in textual conventions reflected a change in the way writers were expected to use their technical knowledge. Students often had difficulty making this shift. As McCarthy (1987) showed, even when a student understood the

the repertoire of a student who, like Darlene, seems to see no options: "But then they [the sources] don't agree -- There's nothing you can say about this." Or is the student simply failing to use abilities he or she has but doesn't use because of task representation, narrow assumptions, rigid rules, or a cost/benefit choice? Or is the writer , like some of the Intenders, actively trying but still struggling to control a new, developing, or difficult strategy? Although researchers and teachers may catch glimpses of unused potential and skill in the making, readers are concerned with the bottom line. What finally matters is not what writers *might be able to do*, but the strategic repertoire they *actually invoke* on normal tasks. Learning when and how to use strategies one already has may be as difficult as learning new conventions and new rules.

This image of growth as negotiation and adaptation predicts that metacognition could play a large role in helping students to learn and engage in new types of discourse. The growth of *strategic awareness means an increased sense of rhetorical options and an expanded power to direct one's own cognition.* We can see the tracks of strategic choice (with or without awareness) in the alternative task representations students created, in the cost/benefit decisions they made about their own goals, and in the theories they held about what was possible and appropriate in academic writing, including their assumptions that older students would handle this task differently (see Reports 2,4, 9). We see the need for awareness perhaps most poignantly in the students who plan and intend purposeful revisions that the reader never sees, and in the students who engage in critical thinking and constructive elaborations, but never transfer that self-generated knowledge to their texts (see Reports 6 & 7). And at the same time, we see signs of growth in students' options as they reflect on their own process:

> So I decided I was just gonna like sit down and read it and try not to think (laughter across the class). So I did that and read straight through and then came to the part where I had to write. And then I realized that I really did not understand what I was reading. . . . So I had to go back and reread like each point. And I kinda got an idea of where I should start and what kind of direction I was going in. . . . I looked [each point] over really carefully in my mind, and I tried to figure out what it was saying -- and then I wrote about it.
>
> And I think that worked really good for me --because I never wrote like that before -- I usually just like sat down and wrote. . . . And somehow things never used to come out the way I wanted them. And this paper came out better than I had expected.

Uniqueness and Commonality: Building a Composite Picture

The conceptual frame proposed here sees students trying to negotiate an entry into the seemingly familiar, yet surprisingly new, and always ill-defined community of academic discourse in which the goals of integrating and transforming knowledge for a rhetorical purpose present a major hurdle. It describes students' performance in terms of strategic knowledge (i.e., goals, strategies and awareness), seen as a form of knowledge that bridges cognition and context. This attempt to link individual cognition and a school context is at best a tentative and partial one, focused on a limited number of areas--task representation, elaboration, the legacy of school, the role of certain cultural assumptions--and affected by our particular emphasis on cognitive data. Even so, this examination of cognition in context has lead us to some seemingly alternative interpretations of "what happened" that might be useful to confront since they are inherent in the individual/social nature of strategic knowledge.

broad goals for an assignment (e.g., to accurately use scientific concepts from a biology article or to marshal appropriate evidence to interpret a poem), the student could have trouble turning those goals into actions. Although her case study student, Dave, had successfully learned to use a thesis-subpoint analytical structure in his first semester composition course, he depended (with little success) on summary in his poetry papers and asserted that the writing tasks for his composition, biology, and poetry classes were "totally different from each other and totally different from anything he had ever done before" (p. 243). In his unsuccessful negotiation with the poetry course, Dave appeared to be preoccupied with the new conventions of interpreting and quoting poetry and unable to see how his old strategies, such as thesis and support, were still required, though in a new guise, within this altered context.

Berkenkotter, Huckin and Ackerman (1988) were able to track an extended process of negotiation and knowledge transformation that took place at the level of graduate work. The student they describe came to a research-oriented graduate program with a strong background in expressive writing. In trying to make the shift to a new body of knowledge couched in the discourse of rhetoric and social science, he went through a process of "reframing" the new information in light of his prior knowledge, that is, trying to transform the issues raised in the new and unfamiliar discourse into personally relevant terms as a way to understand them. However, in doing so the informal and playful style of expressive writing he brought with him did not help him write an explicit, cohesive analysis of the key issues in his sources. Over the semester, he negotiated this transition first by simply switching discourses--writing a personal memo to the instructor of the course talking through the issues his formal paper had failed to address. In subsequent papers he continued to negotiate this transition by relaxing some of the constraints of genre and register to produce a hybrid text--a mixture of personal talk and research-based analysis of issues. The process Berkenkotter, Huckin and Ackerman describe is interesting for our purposes. Rather than leading to the loss of an earlier "voice" or "style", as some students say they fear, this process of negotiation can lead to a multi-register fluency in which the writer is able to command alternative modes of discourse and create, in this case, a distinctive blend of both old and new. However, this multi-register ability did not emerge overnight, and the hybrid and ad hoc variations on "research talk" that the writer made along the way seemed necessary to support his attempt to comprehend and transform new knowledge into his own intellectual framework and goals.

When we look at the discourse conventions and strategies freshmen exhibited in the present study, we see a repertoire that is at once robust, limited, and ripe for change. Some parts of this repertoire, such as drawing comparisons, seem well learned, widely shared and adaptable. Whereas other rhetorical moves, such as the superficial essay "frame" which suggests a synthesis but delivers a summary, appear to be dead end strategies, unlikely to help students meet the higher expectations of the discourse. Other parts of the repertoire observed were strategies, such as elaboration, that had high potential for testing and transforming knowledge which students, however, used in tentative or limited ways. And other strategies, such as recognizing contradictions but still making a statement, were most present by their absence. Although these students often demonstrated the underlying cognitive abilities to analyze, synthesize, or reconceptualize that would support these high potential strategies, some students rarely made such intellectual moves. In celebrating the strengths of these freshmen, we must note that such strategies do not appear to be live options in their repertoire. Why?

In a study like this--and in the classroom--we often can not tell why a student's strategic process fails or runs among the shallows: are certain strategies missing from

On one level of analysis, strategic knowledge can be seen as a response to the immediate environment--a rhetorical action that mirrors back the local, even idiosyncratic context of this class and this open-ended assignment. The students' performance reveals the strategic decisions prompted by this particular situation; our analysis documents a situated action.

However, strategic knowledge, seen as a form of procedural knowledge or "knowing how," depends on an interpretive process in which writers "read" a situation by their own lights. The context that matters most is the one constructed by the writer. A freshman, writing for a history course, describes an act of "rereading" the situation to his planning collaborator:

> So anyway, . . . So I wrote five or six pages on nothing, but I included the words "African nationalism" in there once in awhile. I thought, why this is just like high school, I can get away with doing this. I got the paper back,and it was a C minus or a C or something like that. It said " no content." And I was introduced to the world of college writing.

A fine-grained analysis of the reading/writing process itself paints a picture of individual differences in task representation, in strategies, and in awareness--differences which have a visible effect on texts and, one can predict, on students' success and failure in school writing. This level of analysis highlights writers' cognitive, interpretive engagement with their context and the way in which they translate that context into action--a constructive process that teachers may not always see.

And yet, an analysis of strategic knowledge appears to describe more than the immediate situation and individual writers' processes. The context writers "see" and the patterns of interpretation they bring develop over time; they reflect experience, prior contexts, cultural and social influences. At this level of analysis we begin to see patterns across the diversity that we begin to recognize as a typical "freshman paper" and a familiar freshman writing dilemma. From that perspective this data on how 69 students interpreted a given assignment may offer us an in-depth look at a process and a reading of the situation that other students share.

We believe that a full understanding of what these students did has to honor all of these levels of analysis. When attention is focused on not only the immediate context, but on individual differences within it, and on the larger social and cultural context that informs both, we not only see the process differently, we are in a position to contextualize, qualify or conditionalize each level of analysis with the other. Using each of these perspectives to describe students' strategic response helps us chart their engagement with academic writing in more precise ways.

For example, in describing this transition, we must not assume that *this performance* is a measure of general competence, but must ask: Did the immediate context elicit the best performance these students could muster, or are we seeing a different (perhaps even more relevant) picture of how they approach such tasks? This picture of performance has an interesting status: The assignment was given as part of the freshman writing course in a competitive school where freshman grades can put you in or out of programs. Papers matter. However, in its immediate context, this particular assignment was not graded and was presented with some fanfare as an occasion for examining one's own writing process. Moreover, it is easy to imagine that a highly motivated assignment on a topic chosen by the student could elicit a higher

level of commitment, energy, and imagination--and to predict that on such an assignment we would see more sophisticated critical thinking, planning, and a sharper sense of purposiveness than we saw. We have no doubt that under ideal, supportive circumstances these students, like most writers, *could* write better papers and think more rigorously than they did. This study, then, should not be read as an evaluation study or an attempt to mark the upper or lower limits of this group's ability.

On the other hand, the interviews showed us a group of freshmen trying very hard to succeed at their first term in college, drawing on their best guesses from high school about how to do it. Moreover, the students who did the thinking aloud protocols at home were receiving special attention. It was clear that we thought their writing strategies were important and that they wanted to look good to themselves and the class. The protocols make it apparent that nearly all of these students were engaged with the task, that they set standards they couldn't always reach, and that, as they ran into dilemmas, they were willing to worry and struggle with this problem even when they couldn't figure out what to do. As one student says in her protocol, trying to account for why she is in such a jam:

> How can I possibly make this into anything? Now I sound like one of the kids in the survey [a student survey in the source materials which discussed procrastination]. Yes, I put it off till the last minute. -- But I did not. It's 12:58 p. m. It's noon time. I'm sitting here thinking about rehearsal tonight. I'm sitting here thinking about anything but -- That's not true. I'm thinking about time management. And I'm thinking that I'm not doing well, but I don't know why.

What then should we make of this picture of "freshman performance" with its complex mix of motives? As an analysis of the immediate context tells us, this picture doesn't intend or pretend to measure students' highest potential or developmental limits. Yet the analysis of individual writers shows genuine engagement and persistence (to a point) with difficulties beyond the writer's immediate power to resolve. Despite this effort, however, the papers and the goals students set failed to meet the expectations of both instructors and many students. Here we find that a broader social perspective on writing in school may help us see coherence in this mixed performance. From our experience with freshman writers, this mixture of limited goals, reasonable effort, and perplexity at the result is not surprising--the papers failed to meet our expectations in some expected ways. Perhaps the most useful way to read this data is as a picture of the *standard repertoire* of writing strategies these particular students control with comfort and call up without question for tasks they expect school to present. In their second month of college, they come with a prior context of writing in school, especially of writing based on reading. *Their performance shows us the skills they have mastered, the criteria they believe are appropriate, and the strategies they can draw on at will and manage with confidence.*

The notion of a partially shared standard repertoire for school writing stresses commonality. A more fine-grained analysis of the individual writer at work reveals not just uniqueness but lets us glimpse the cutting edge of personal growth. In the process data we could see places where this standard repertoire was hitting its limits, failing to deal with inherent problems in the task (such as embedded contradictions) and failing to meet other expectations for academic sophistication. All these images are necessary parts of the picture. While a broader, social reading of this performance foregrounds a familiar pattern we are calling the standard repertoire, a closer process analysis of individuals trying to use that repertoire on a new task shows it coming into conflict

with the demands of the rhetorical situation. Moreover, in the crucible of their own writing process, these limits were becoming apparent to students.

This composite picture of the individual experience and the larger pattern suggests a starting place for teaching. Under special circumstances, all of us can do extraordinary things. But one goal of education is to make certain abilities and strategies, such as forming an astute anticipation of a reader's response, subject to the conscious choice to use such strategies even when circumstances do not elicit our best. Being able to engage in what Bereiter and Scardamalia call "intentional cognition" (1987) means that we can think well and write effectively even if the topic is new, if the goals are set by circumstance not choice, and our heart is not on the line. The "standard repertoire" of goals and writing strategies a given group of students shows us is not "all" they can do, but it represents the working knowledge on which these students rely--even in the face of problems. It shows us the foundation on which our instruction needs to build if we hope to extend that standard set and reveals some of the assumptions about academic writing we might want to challenge. This analysis also raises a question about other populations of students. Do they bring a similar shared repertoire of goals and strategies and assumptions to academic writing? Does such strategic knowledge vary in significant ways across groups?

The first section of this report has laid out a conceptual framework for understanding how freshmen deal with academic writing as a cognitive and social process. In section II we will take a close look at one set of strategies students used to construct an organizing idea. It will show us how a growing strategic awareness might let students adapt and extend the processes they already use, to enter the more sophisticated discourse of our expectations. However, in section III I want to end with a disquieting possibility that cognitive and social forces may be working together against this awareness.

Our study has repeatedly observed that students' very success with school writing and recitation may be part of the problem. Their assumptions, like their assured opening moves, create a legacy writers must resist and revise. When students begin to struggle with this problem, the transition seems well underway. But some students, I will suggest at the end of this report, may never fully register the difference between the school tasks they do so well and the more complexly constructive act we have in mind. Given our own teacherly task representations which set such store in critical thinking and purposeful reading and writing, we have no trouble seeing an important transition in front of our students, and we know that it can entail some significant changes in cognition. But for some students this intellectual initiation--so evident to us--may be a ***tacit transition***: That is, the range of goals and the intellectual strategies one needs to employ has expanded, but the task--writing an essay in response to reading--and the rhetorical context--student writing to teacher--look remarkably the same. Moreover, the familiar cognitive processes of comprehension and knowledge telling are so robust, able to do so much of the writer's intellectual work, that some students never realize that significant strategic changes are called for. They may simply fail to see what all the fuss is about.

DEVELOPING AN ORGANIZING IDEA

The work of a constructive process is most evident when knowledge resists easy translation into text. When students in this study looked at the protocol record of their own process and talked about it in class, the difficulty they referred to most was "getting good ideas." For an essay like this the key problem seemed even more specific: where do you find that central good idea that will then organize the paper for

you? In order to pursue this part of the freshman repertoire that seems to loom large for both students and teachers, we decided to track down the process by which each of these 17 freshmen arrived at their final organizing idea. We framed the analysis to answer questions a teacher would ask, such as: what process do these students actually use to get an organizing idea? Are half of my students doing something the other half doesn't even consider doing? How is it that three (but only three) students created surprising and original ideas when I encouraged everyone to do so? And what about the two students in the back who turned in three semi-coherent paragraphs with no organizing idea? What happened when these 17 students wrote?

Without even looking at the protocol data or listening to the students, we can predict some reasonable answers to the question: how do students get their organizing ideas? One solution to the problem would draw heavily on the available topic knowledge. That is, the student could simply *select* an important or relatively inclusive idea from the source text. Another solution depends on knowing the conventions of academic discourse. For example, one authority in the source text, William James, admonishes us to push through fatigue to new energy. But another authority, Jean Guitton, says to rest at the first sign of mental fatigue. Now in such a situation the conventions of academic discourse might come to one's rescue and provide a commonplace or conventional posture which a writer who was savvy to such discourse could take.

And indeed that happened. One popular commonplace--six students used this--was a variation on the theme, "Time management is a very important topic (and here are some things I have to say on it. . . .)." A somewhat more sophisticated commonplace was the academic waffle which begins with the statement, "There are many theories about time management." However, knowing a commonplace wasn't always enough to solve the problem. Here is the difficulty in Bob's words as he is describing "this most interesting feature" of his process in class:

> I started with "There are several theories as to the most efficient strategies concerning time management." Which is really bad -- And I wrote like a page of this. I just stopped and I went: This is just so bad -- And I just said, like -- I have to take this totally from my own point of view. (PAUSE) But first I have to get a point of view.

His rueful final comment brought the whole room into sympathetic laughter.

The thinking aloud protocols revealed five reading-to-write strategies freshmen used in the face of this dilemma to get a point of view and an organizing idea, each of which had some distinctive costs and benefits. Three were primarily reading strategies which we labeled the gist and list, the TIA and the dialogue strategy. The other two strategies, knowledge-driven planning and constructive planning, are ones which support writing. In describing them I want to raise two questions which we can only partly answer: First, what does each strategy offer a writer? And secondly, do the students who use only some of these strategies possess the awareness of and option to use the others?

Strategies for Reading

Although strategies are revealing, we must first recognize that the foundation of the reading-to-write process is the basic process of ***comprehension*** itself (cf. Report 5). The comprehension process described in recent reading research and theory is much like composing, a highly constructive process. In simply reading for understanding, students are doing much of the cognitive work we associate with writing. For instance, they read James and recognize his main idea. They read Guitton and notice the contradiction. They get the gist of a passage. And they put these gists into some sort of meaningful structure--*simply in the act of comprehending the text.*

Some students merely extended this constructive comprehension process into a more systematic strategy which we called ***gist and list.*** For these students, gist and list is a well-learned strategy. The writer goes through the text looking for the main points, finds an idea or term which links them, and uses that to organize the text. This familiar strategy, the product of years of paraphrasing, summarizing and recitation in school, is dominated by the text and fueled by the reading process (see Report 8). It is fast, efficient and faithful to the source.

By contrast, a second strategy we observed was driven less by the text and more by the reader's own knowledge. Eleven of the seventeen students used a strategy which took on the rhythm of a private, mental call and response. Students would read a line of text and say to themselves in the protocol:

> [Text] Yeah, I agree.
> [Text] That's probably true.
> [Text] Yeah, I do this.
> [Text] What does that mean? [further thought] Oh if that's what it means, then I agree.
> [Text] That's ridiculous.
> [Text] That says absolutely nothing to me.
> [Text] That's nice; I've done that.

We ended up calling this the ***True, Important, I Agree*** strategy--or the ***TIA*** for short. The student using the TIA strategy goes through the text with a special, evaluative filter. Certain ideas appear to be tagged, or stamped like USDA Prime with this is **T**rue, this is **I**mportant, or **A** Agree with this. TIA is an effective method for selecting the ideas you like, already know about, and could write on--and for deleting the rest. For one student, Suzie, the "most interesting thing" about her protocol was learning that she had this strategy. As she reports in class:

> So this time, since I was talking out loud, I was very conscious of the fact that I was making connections to what everyone was saying. Using my own--using things that have happened to me to connect to the people that were talking about time management. . . . And I realized that I actually do have strategies to read -- I thought I didn't -- I thought I was some kind of odd person who didn't have any strategies ever. [She ends her statement with an uncertain laugh.]

TIA is a very powerful strategy for reading to write. Like gist and list it builds on the foundation of the comprehension process, but then uses the writer's own response to create a pool of ideas the writer likes, understands, and can elaborate upon. If one True, Important or Agreeable idea stands out at the end of this reading, it can automatically take on the role of an organizing idea. Here in Suzie's protocol we can see the TIA at work as an invention strategy as she monitors her current thinking and develops a plan:

I'm writing down things I agree with--that I can comment on because I agree with. He's not saying things I disagree with. There are some people in this article that are saying things I disagree with. I guess I'll put it in two different parts of my paper. The things that I agree with and the things I don't agree with. Alright.

However, TIA has an important limitation. It is a one-way communication in which the student selects or rejects the claims of others but does not appear to listen to what the voice in the text is saying about them. The writer who depends exclusively on the TIA strategy either selects her own congenial company, ignoring the rest of the "unselected" information, or simply organizes the paper into sheep and goats based on her prior attitudes on the subject. Evidence is not an issue. The writer is not open to argument or learning.

Given this limitation it was exciting to see that some students brought an additional strategy to this process. More precisely, what they did was to *embed* the useful TIA and gist and list strategies in a more complex process we will call a ***dialogue*** strategy. (see Figure 17).

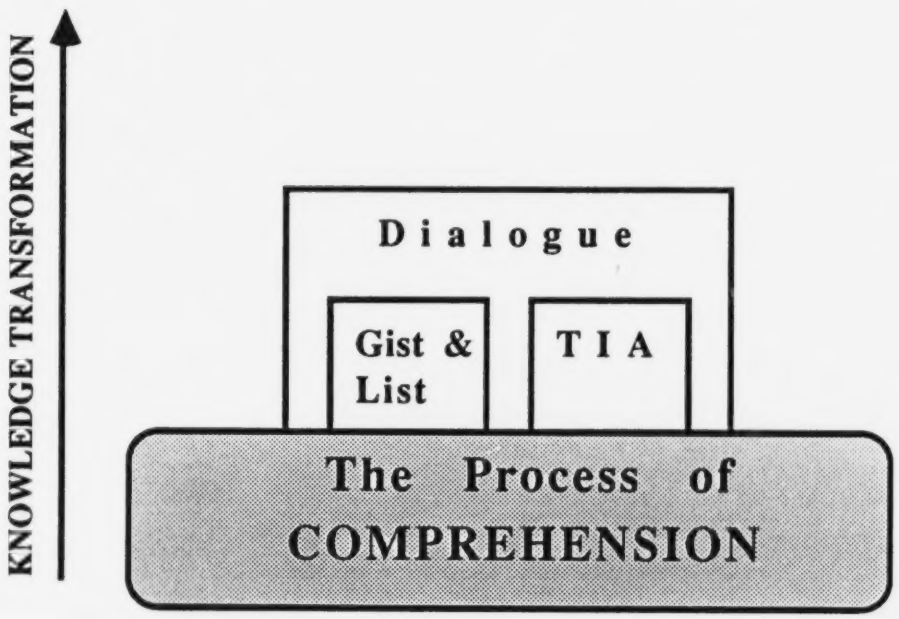

Figure 1. Reading Strategies and Knowledge Transformation

In a dialogue, the text is not simply selected or dismissed; it is in a sense listened to and allowed to talk back. By questioning what the text means, the writer using the dialogue strategy begins to move toward a *qualified, negotiated understanding of the ideas in question*. In these dialogues the sources are also allowed to talk to each other: James says to push on despite mental fatigue, Guitton says to rest at the first sign, and the writer says, "what should I make of this?"

The dialogue strategy in these protocols was identified by four key features (inter-rater reliability .83), all of which create relations among ideas. One form of dialogue was simply a comparison between the two authorities in the source text: "This one says X and/but that one says Y." A second form of dialogue generates examples. Building on a TIA response, the student goes on to extend or elaborate the source's meaning with an inference, an example, or a reason (a supportive dialogue). For instance, in response to James' advice to push on, the writer responds, "It's like having a second wind." Or the reader may present a counter-example (a critical dialogue). In the excerpt below, Bob has just read a sentence in which one authority points out that students who schedule lots of study time seem to get higher grades. He responds: "He's saying work all day. That's stupid. -- You have to eat. You have to take showers. You have to sleep. You might schedule time to sleep also." Bob's sarcastic tone suggests that long work days may be a new idea to him. Nevertheless, the dialogue is started. (Note that our coding excluded inferences which were deemed to be so obvious as to be nearly a paraphrase of the source. A response had to contribute new information to be termed a dialogue.)

A third form of the dialogue leads to qualified and contextualized ideas. The reader responds by imagining a scenario or an instance in which the idea in question might operate or by imagining a hypothetical situation in which a claim from the source text might be tested. In this process of contextualizing an idea (e.g., the idea that it helps to schedule study time), dialogues often spell out cause and effect relations or they tie a claim to certain conditions in which it is valid (as in, "Oh that [scheduling] works sometimes, until everything piles up on you."). As a result of these contextualizing dialogues, readers end up adding qualifications to their own ideas or to those of the supposed authorities. They start seeing claims as conditional.

In the following brief dialogue Jordan entertains three voices--his own, the text's, and "most people's"--as he thinks through a statement in the text advocating music as white noise.

> That's what I always thought. Most people say to me, don't listen to music. But if you get a quiet music going on all the time, which flows, as he says, steady, then it definitely helps.

Even though Jordan already agreed with the claim, his dialogue, unlike a TIA response, led him to establish its range of validity. This move to qualify ideas is typically signalled in the dialogues by certain conditionalizing linguistic patterns observable in Jordan and the previous example. Below are three skeleton dialogues in which the content words have been removed to highlight this qualifying play of mind.

1. True, if. . . and if . . , but, . . because. . . . If. . , then. . . .
2. At times, . . because. . . . But not necessarily, . . . If. . . .
3. Yeah, but. . . . It 's stupid to say "never," and so. . . .
   [The writer concludes] It's gonna help in the long run.

Finally, the combination of comparisons, examples, and qualifications in these dialogues sometimes led to a fourth form--a statement that synthesized two claims by qualifying both or at least putting them into relation with one another. Such syntheses may offer genuinely new insights, or perhaps just an accommodation as in one dialogue which moved from a claim to a "but sometimes" counter example and then concluded with, "But to each his own, I guess."

As these examples show, the dialogue strategy is not characterized by moments of rigorous, formal, or logical examination of the sort presented in books on inductive logic or critical thinking. On the other hand this informal elaborative strategy seems to yield a qualitatively different representation of meaning than that created by TIA or gist and list. In it, authorities, prior knowledge and the student's current inferences are brought face to face with one another. Claims are tested against other evidence or other experiences, and often emerge as qualified, more fully contextualized ideas.

The contrast I have drawn between the gist and list and the TIA strategies on one hand and the dialogue strategy on the other is particularly important if we are interested in asking students to use writing to *transform* their knowledge--not just to express it. If we imagined a continuum defined in Figure 1 as the Knowledge Transformation Continuum, we could conclude that the gist and list and TIA strategies *can* lead to changes in knowledge. At the least, they help students learn new information and reorganize their prior knowledge , but those two categories of information will rarely interact with one another. Gist and list is highly dependent on the text. The TIA strategy is driven by the student's prior experience and beliefs. If one thinks William James' advice is bunk, that is the end of the matter. Students using the TIA did not ask themselves: What is the evidence? How could I decide which claim is true? Or even *why* do these people disagree? When the TIA or gist and list is embedded in a dialogue, however, the opportunity for *examining, questioning, qualifying and extending knowledge* goes up. This option for transformation applies both to one's own knowledge and the claims of the "authorities."

Making a Plan to Write

The gist and list, TIA, and dialogue strategies describe three ways students used their reading in order to write. But this raises the question, how does one go from response as a reader to forming an organizing idea and a text of one's own? The answer is not simple, but I would like to contrast two particular strategies students used because this contrast may help explain why the transition to academic discourse--the real focus of this chapter--is often difficult. The contrast will show us a powerful, efficient--and limited--strategy operating in a situation that calls for more.

As Figure 18 shows, some students simply embedded the processes we've already looked at within a knowledge-telling and/or a schema-driven plan. That is, their reading had created a mental representation organized around the topic and/or their response to it or around the plan supplied by a familiar text schema. Writing was essentially a process of communicating that knowledge.

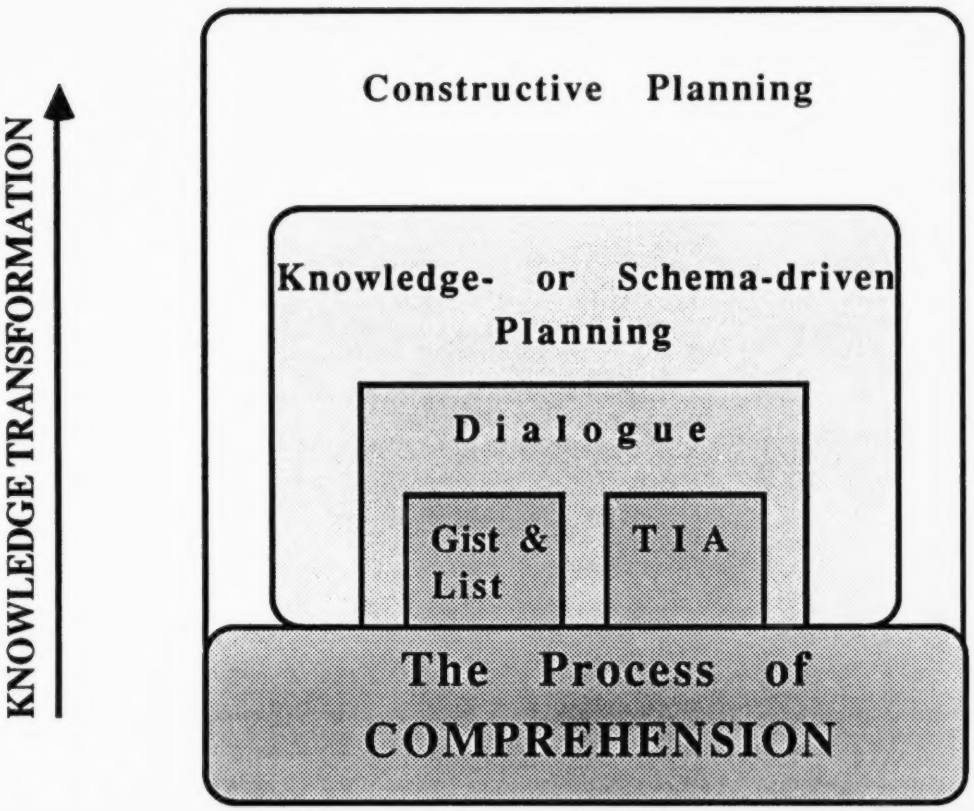

Figure 2. Knowledge- or Schema-Driven and Constructive Planning

Dotty, for example, was the "TIA Speed Queen" in this study. She started the assignment at 12:30 p.m., using the TIA strategy. Within five seconds of completing the reading, an organizing idea rolled off her pen as final text. She used the commonplace "Time Management is important" for her introductory sentence and then wrote about a short list of "important things to remember" --based on ideas she had selected by TIA. Dotty shows us a low-effort, knowledge-driven plan at work. A high-effort version of a knowledge-driven plan can look quite different. One of the most careful planners of the seventeen picked her way through the source text, carefully classifying, defining and synthesizing. She and Dotty produced very different papers, but both relied on a planning strategy that focused exclusively on organizing and presenting knowledge.

This knowledge-driven (and to some extent format or schema-driven) approach accounts for the planning process of 10 of these 17 students, and for good reason. A knowledge-telling plan for writing, especially when it is based on a TIA response, has both academic virtues and practical advantages. It is not only highly efficient, but allows writers to show they have read the source *and* to translate their own ideas directly into text as a response. A student can write a highly rated, well-organized summary, synthesis, or personal response with the strategy--as well as a quick and superficial paper. However, if one wants the writing process to also lead to a transformation of knowledge, it is likely that knowledge-driven planning will short-circuit much of that process. A plan to *tell* one's knowledge is different from a plan to *transform* that knowledge for a clear intellectual or rhetorical purpose or to

adapt it to the needs of a reader. This is not to say that all writing needs to create such transformations, but this ability is often critical in carrying out academic discourse.

From this perspective then, an alternative strategy seemed particularly important. Seven students in this group placed their work in the still larger context of their own ***constructive planning.*** That is, these seven students who engaged in constructive planning *spent time thinking about not only content, as did everyone, but about goals for this paper, about criteria for judging it, about problems in designing it, and/or about alternative ways to handle the task.* They became reflective, strategic thinkers, looking at their writing as a rhetorical problem and a constructive act . (We should note that in reading research, the term "constructive" is used as a broad statement about epistemology--an assertion that all reading involves inference drawing and meaning making (Spivey, 1987). In the present distinction between knowledge-driven, schema-driven, and constructive planning, "constructive" refers to a more narrowly defined act--a more fully conscious, attention-absorbing, problem-solving process that some planners may engage in at some times (Flower, Schriver, Carey, Haas, & Hayes, in press)).

Constructive planning, when it happened, often came as a response to a problem. Collene has just written a predictable sentence defining time management. It is followed by a paragraph on the theme of "there are different theories." She looks at her work and says in the protocol:

> Garbage. Well, this is not enough. I have to write some more. [This evaluation appears to push her into an episode of constructive planning that goes on in a sort of musing, sing-song tone.] Ok so what? What do I think about this. Time management. What do I know about time management. . . .
>
> [A little later] "The key" nah -- I wish I could get an angle on this. How am I going to do this? Why [vocal emphasis] do I want to do this? What good will it do me? Time management? "Time management. What good will it do me ?" -- "How can I time manage." No. How am I going to do this? "What good will it do for me?" [And then, flipping back to the assignment, she discovers another possible angle on the subject and says to herself:] My opinion -- [paraphrasing the text] write down my statement, based on my interpretation of this data.

This episode of constructive planning may not be brilliant, but it shows a student's explicit, reflective attempt to set goals for herself and to consider alternative rhetorical approaches to her subject. The problem of making a plan and writing a paper has itself become the subject of thought. This planning strategy, as I have suggested in Figure 2, often builds on the other strategies we have discussed. A knowledge-driven plan, for instance is often embedded within and guided by a constructive, rhetorical plan for how to use that information.

In using the term "constructive planning" I have made a distinction between this reflective effort to solve a rhetorical problem and the bulk of planning which goes on in these protocols--that is, content planning which is focused exclusively on selecting, structuring, and expressing content information--without apparent reference to rhetorical goals. An ideal description of students' planning would integrate both, including not only the organizing plans discussed in Reports 2 and 3, but other aspects of content planning, such as topical structure and development (Witte, 1983).

One limitation of this analysis, then, is that it doesn't describe the way in which the rhetorical plans these writers made produced specific manipulations of content. Another limitation to bear in mind is that some constructive planning is certain to be carried out tacitly, so that students are making decisions the protocols don't capture. However, this absence is also informative: it tells us that the attention students are giving to these decisions is so fleeting there is nothing to articulate, or so automatic that it fails to rise to conscious attention. The protocols show us to what extent students are engaging in conscious, articulated planning over which they can exercise some reflective control. There are reasons to think this is valuable. In an extended study of the planning process and how effective writers use it (Flower, Schriver, Carey, Haas, & Hayes, in press), we found that students often relied on knowledge-driven or schema-driven plans to guide their composing. Experts used such plans too, but they embedded them within the larger designs of constructive planning.

The constructive planning observed here served at least three interestingly different functions: intention setting, creating a plan, and monitoring progress. Collene's episode begins with intention setting in the form of a very open-ended call for a plan when she says, "Ok, so what? What do I think about this?" Her later, more specific decision to "get an angle" refines that intention. Intention setting as Collene uses it initiates and directs a search of both her own memory and of the text. And in its small way it sets certain criteria (e.g., I need an "angle") that help her manage her search and her attempt to construct a rhetorical plan for the paper.

A more obvious function of constructive planning is to create a plan itself (such as Collene's final plan to use her opinion as the angle for the paper). However, we should note that these plans were often tentative: the act of planning let writers hold an idea up for consideration. Finally, many of these moments of constructive planning were devoted to evaluating a plan, evaluating a piece of text in light of a plan, or managing the writer's own process on the basis of goals or a plan. In general, these episodes let people monitor their progress and keep contact between their goals for this text and the result so far.

In the example below we can see Fred not only doing constructive planning, but considering and rejecting a knowledge-driven plan based on "just restat[ing] a lot of this stuff." In these excerpts he uses his plan to direct his reading, which leads to a different interpretation of Guitton than he held before planning. The plan itself also develops as he works, and he ends with a very satisfied evaluation of his progress:

> Unless I just restate a lot of this stuff, talk about the fact that, you know, it is important, . . but that's not what they want. They want me to assimilate this, come up with some conclusions, they [should] be related to something. . . .
>
> [He rereads the assignment and appears to conceive a new goal.] I guess I'm gonna have to deal with how, how to attack the problem of time management. It sounds good, write this down, and attack problem. Yeah! Great! Things I can think of off hand, you got to put in there about . . . . [At this point he begins to review his notes, to search the text and to rethink his response to Guitton. A few minutes later he returns to his plan.]
>
> I guess I can do a little bit more than restate what they have in the text. I can relate to my situation as a college student. It would be easier to relate to a college student! Well, wonderful.

Strategies and Academic Discourse

Examining the strategies these students used to develop their organizing idea has given us a close look at one small but probably critical part of the freshman repertoire. Our analysis here is both exploratory and descriptive: it can't assert a cause and effect relation or show us what to teach. But it can prompt us to question some assumptions about learning to write in this context, and it can help us build a more articulate, data-based hypothesis about what these students were doing. Let us return to the question which began this report. What is going on when students negotiate their transition into the discourse community of academic writing, when the goal of such writing is full and critical literacy? That is, what happens when we expect students not only to read others and ***summarize*** accurately, and to ***respond*** insightfully, but also to ***interpret*** and apply their reading and their own thinking to a new ***problem*** or for a ***purpose*** of their own? How might strategies such as these contribute to this vision of academic discourse?

As a group these students demonstrated an impressively complex and flexible body of strategies for writing. Although there is much we could gladly teach, many of their thinking strategies have the potential for sophisticated, critical thinking, for learning, and for building a crafted piece of work. Moreover, when students turned their attention to figuring out what the assignment and situation required, we could see them actively compensating for the practiced moves and easy reliance upon conventions a more experienced writer would have. We can catch a glimpse of how constructive planning lets writers compensate for some of the topic knowledge and the discourse knowledge they, by definition, lack when they are learning to write in some new way or when they are writing to learn new information. We saw little to suggest that these students need to learn radical new ways of thinking or make a developmental leap in order to use strategies such as dialoguing or constructive planning. But it was clear that not all of the students used all of these strategies. The study showed us, on the one hand, a repertoire of powerful and seemingly accessible strategies and, on the other, a number of students who relied on the more familiar but limited process of comprehension, summary, and response.

And yet, even if we grant the potential of these writers and the power of an expanded repertoire, we must still explain how this or any set of strategies actually operates in the context of writing in school. How does such a process work and what might teachers teach? Let me contrast two ways of imagining the role of strategies, which I will describe as the "good process" conceptualization and a "strategic process" view.

The Myth of the "Good Process"

As teachers we are sometimes overeager to formalize knowledge worth having into a set of activities we can teach--especially ones we can also observe in class or in a text. The process movement in writing, for all its virtues, has become at times absorbed in the search for a mythical and canonical "good process." Is it possible to identify certain processes or activities (e.g., the holy trinity of prewrite, write and rewrite) as inherently valuable and to build a composite, obligatory "good process" for students to walk through? Or are we dealing with a far more radically goal-directed, strategic process in which a mental activity is only as good at the uses to which the writer chooses to put it?

For instance, one could imagine that the strategies sketched here in Figure 2 reflect a meaningful progression; that is, that Gist and List, TIA, Dialogue,

Knowledge-driven and Constructive planning form a "natural" or desirable *sequence* which good writers go through as they compose--or which students *should* go through as a set of steps. However, there was no indication in this study that students used these strategies in any standard order or that one *needs* to perform one strategy (such as knowledge-telling) in order to do another (such as constructive planning).

We might ask if these strategies fit into a developmental sequence, with constructive planning as a more abstract, more complex process. However, a developmental explanation of why these college age adults chose to do knowledge-telling would be a weak hypothesis--there are too many better alternative explanations. Moreover, there is no evidence that it is inherently "easier" to summarize (gist and list) than it is to question and elaborate (dialogue). When students discover dialoguing as a new strategy they can now consciously use, the leap they make, I would argue, is not a developmental change in ability but a change in they way they represent the task and their options. As the student quoted at the beginning of the introductory report said: "What I wasn't used to was interjecting my own feelings about the assignment as I went along. And when I think back on that, the fact that I stopped and responded to what the author had just said. . .that was a new experience for me."

Another possible, but I think inaccurate, way to conceptualize strategies is to imagine a context-free "good process" in which strategies form a hierarchy based on their value--each one better (more sophisticated, more literate, more useful etc.) than the last. And yet, as we discussed in Report 2, what criteria would we use to define "valuable"? A dialogue strategy is good for stimulating critical thinking, and we want students to be able to do such thinking when they need to. On the other hand, if Walter Pauk, one of the authorities quoted in the source text, were asked to do this assignment, his deep knowledge of the topic and well-developed schemas for such a piece might make a mental dialogue or constructive planning quite unnecessary for writing a good essay. It would be a mistake to force these processes into a simple, ascending taxonomy of intellectual skills. A more accurate description would have to plot their *strategic value* for the task at hand--did the writer need the strategy to accomplish what he or she wanted to do or what the situation demanded? The apparent value of the dialogue strategy in this study was a function of the task we gave students. Even though this task is an important one in school, we should not be lured into a simpler theoretical view of value.

The limitations of a "good process" conceptualization become even more problematic if we consider what we actually want students to learn. When, for instance, I look at the constructive planning of Fred and Collene, I am inclined to echo the sentiments of Fred, who concluded his planning with "Well wonderful." It is, I believe, reasonable to infer that these particular students may have an ace up their sleeve; they appear to have valuable strategies in their repertoire that help them solve problems, transform their knowledge, and write good papers. And it appears that other students don't have or use such strategies. The next reasonable inference is that if teachers could get students to engage in mental dialogues and to do constructive planning--if they could make that a part of students' process on every assignment--students' writing would improve.

There is, however, a problem with that inference. In this study, only three of the seven students used constructive planning to create what I as a teacher would value most--a purposeful, rhetorically aware text. And a fourth planned her way to a thoughtful synthesis of the source texts. The remaining students who did constructive planning, however, used it to turn their TIA notes into a paper in which they essentially

commented on ideas they agreed with. Constructive planning was in fact useful to them--but it did little more than help them think a lot about how to write a limited paper. Or consider the students Stein (Report 6) describes who made impressive use of elaboration and dialogue during reading, but used almost none of that material in their final texts. Strategies and writing activities alone, even "good ones," are only as "good" as the uses to which writers put those processes.

The Embedded Structure of a Strategic Process

In place of attempting to prescribe a canonical "good process," I think we need to conceptualize academic writing and the attempt to learn it as a strategic process in which the writer's goals and metacognitive awareness play a critical part . We would then see, for instance, how the writing process operates in intimate response to context as the writer sees it and how writing strategies are ordered in a *structural* hierarchy. That is, the hierarchy this data does point to is not based on value; rather it is a structural metaphor for how these strategies *function* with one another. Actions that are higher in the hierarchy operate by incorporating other strategies as supporting parts of a larger process. As the simplified schematic diagrams in Figures 1 and 2 attempt to show, these strategies are recursive in the sense used in linguistics: they can embed other strategies within themselves. The dialogue strategy, for instance, is not an esoteric or independent new cognitive process that bursts on the scene in these protocols. Instead, it builds on the students' well-developed abilities to locate important points and to create gists--but adds to those processes the additional goals of questioning, conditionalizing, and testing. It embeds the gist and list and TIA within an expanded effort. And the constructive planning we observed is not a different species from knowledge-driven planning; rather it adds an additional set of goals (beyond knowledge telling) to the planning process. These goals, generated by the writer, dictate how knowledge will used. Constructive planning embraces the TIA, the gisting and the dialoguing that has gone on before in order to use them and to transform the knowledge they yield for a special purpose.

One of the advantages of recursion is the ability to embed complex processes such as comprehending, summarizing, knowledge-telling and so on within another strategy, such as constructive planning, and thus to extend their use. The relation we observed then is a structural hierarchy (rather than a procedural, developmental, or value hierarchy) in which certain strategies embed other processes within themselves, as the writer attempts to meet a new set of goals or personal criteria. Whether a writer is fully conscious of it or not, these cognitive processes are in fact moves in a strategic process which takes its meaning and its shape from the unfolding goals and needs of the writer.

Recently, both Applebee (1986) and Hillocks (1986) have argued that the "process movement" in teaching writing has sometimes lost sight of the fact that writing is a *goal-directed process*. Teachers lose sight of this fact when they teach the writing process as a sequence of exercises that are presumed to be good, in and for themselves. As Applebee has shown, teachers may treat journal keeping, peer review, or revising as obligatory behaviors in a "good" process, even when the success of a paper finally depends on quite different strategies, such as the careful reading of a science textbook. Students begin to see the "required good process" as irrelevant to the real goals of their papers because we have failed to make it clear that these activities (e.g., journal keeping) are really *optional strategies in the writer's repertoire*, which are especially useful in certain tasks, for certain purposes.

The same problem occurs when researchers, trying to describe the process of "good" writers, simply count behaviors: e.g., how many times writers plan or how

many global corrections they make. In both cases the teachers and researchers are working with a psychologically impoverished version of the writer's process. They have failed to account for the logic that drives successful problem solving. Because writing is a constructive, rhetorical process, it can not be equated with simple behaviors or classroom techniques: we are dealing with a strategic, contextualized action, a thinking process that is guided by the writers' goals and by their interpretation of the writing situation. Although constructive planning or dialoguing, for instance, are strategies with high potential and ones which I tend to value as a teacher, they can be put to widely differing uses. They neither predict nor insure success.

In order to understand the repertoire of freshman writers, then, we have to look at the ***goals*** as well as the ***strategies*** students employ and at the task as they are representing it to themselves. The ***awareness*** and ***metacognitive control*** students bring to their own goals and process is difficult to assess and to teach. Yet this third element of strategic knowledge may be more critical than we have realized as we try to chart the transition into academic discourse and to explain why this necessarily challenging journey may become unnecessarily difficult for some students.

THE TACIT TRANSITION TO ACADEMIC DISCOURSE

This study presents us with a perplexing picture. We see students who are relatively efficient readers and writers, who are skillful and fluent with some forms of academic discourse; nevertheless, the texts they produce fall short of our larger expectations, and students themselves often feel confused about why. What might this situation look like from the students' point of view? Are our new expectations less self-evident, is this transition more tacit than we have assumed? We will suggest that the context of school writing and the cognition which supports reading-to-write may conspire to make this transition seem both invisible and unnecessary to some students. Let us begin with cognition.

The Comprehension and Response Strategy

A look at the cognitive basis of the reading-to-write process suggests one reason students' paper writing habits might be so resistant to change. Although the theoretical description of a comprehension/response strategy proposed here will go beyond what our study can confirm or deny, it offers us a research-based way to understand students' experience. The reading-to write process can be said to be built on the foundation of two strategies, or rather two large, interlinked families of strategies that are central to school--comprehension and response. The cognitive processes which underlie this "comprehension/response" strategy, as we will call it, are so robust and so well-learned, that this strategy can handle most school writing and important parts of more complex academic discourse--as long as the writers are not asked to purposefully invent and transform their knowledge.

Consider for a moment the cognitive processes that are a normal part of reading for comprehension. At one time reading was described as a receptive process of "decoding" and storing information for later recall. However, the cognitive perspective in recent reading research has built an impressive picture of a "constructive" process in which readers organize, select, and connect information in order to build their own mental representation of a text (see Spivey, 1987, for a review of this work). Readers not only bring their prior knowledge in the form of schemas and assumptions, but use a combination of their prior knowledge and the text to make a meaningful interpretation.

Furthermore, this constructive, meaning-making process is itself guided by the goals of the reader, who may be reading to follow an argument, pick a fight, or enjoy a cup of tea and a good book.

If people who are ostensibly reading for comprehension are, in fact, building a unique representation of meaning, what sort of representation do they produce ? Would that mental representation--created simply by reading for comprehension--look at all like an essay a student might be asked to write? A brief review of what the subjects described in this reading research are typically doing suggests that many features of a standard "freshman" essay might be supplied by this reading process alone.

1. *Readers select and recall the main points or important information from the text.*

   Ideas that are high in the text structure or idea hierarchy of a text are better remembered (Meyer, 1982), although good and poor readers differ on what they think is important (Winograd, 1984).

2. *Readers also create "gists" which condense or collapse related ideas in a text into more abstract or inclusive concepts.*

   These gists and inferences play an important role in comprehension, serving as anchor points which readers refer back to as they try to build a coherent meaning or a "connected text base" out of the unrolling text (Afflerbach, 1985, Kintsch, & Vipond, 1979).

3. *Readers not only select and invent main points, they link this information in various structured ways.*

   The macrostructures people build during comprehension and at the point of recall can take the form of a loose collection or a highly structured hierarchy (Meyer, 1982). These structures may reflect personal or cultural schemas readers bring to the text more than the structure cued by the author (Bartlett, 1932, Meyer, Brandt, & Bluth, 1980). Good readers are more likely to be able, on request, to build a macrostructure that resembles the author's than are poor readers (Meyer, 1982, Winograd, 1984), and readers differ in their ability to restructure information (Mandler & DeForest, 1979).

4. *Readers do not stop with these handy blueprints of the text. They create extended elaborations and inventive inferences that become woven into the meaning of the text.*

   These elaborations and inferences often help resolve problems in comprehension (Bransford, 1979; Haas, & Flower, 1988), but they may also be highly personal associations triggered by the text (Reder, 1980). Many of these inferences become a part of the meaning to the extent that readers cannot distinguish between what they actually read and what they inferred (Bransford, 1979; Kintsch, 1974).

5. *Finally, this comprehension process--and the representation it builds-- is highly subject to the individual reader's goals.*

   If the goal is to find connections, readers might well ignore contradictions that don't fit the picture (cf. Spivey, 1984). If the goal is to find the "author's" structure, a more inclusive representation will be created (Meyer, 1982). And if the goal is practical action, such as planning a burglary, the reader of a household description is more likely to remember the TV set than the leak in the roof--a fact which the prospective buyer would recall (Pichert & Anderson, 1977).

To sum up, in "simply" reading for comprehension, readers are building a mental macrostructure based on main points and larger gists cued by the text, extended by elaborations and inferences and sensitive to the reader's own goals. They have created a complex and highly structured private representation of meaning.

What does this tell us about reading-to-write? Many people, such as Tierney and Pearson (1984), are urging us to see the parallels between reading and writing as constructive processes. Readers too, they argue, can "revise" their understanding as they read, and they can set goals for themselves, such as the goal to reread and see the text from a different perspective. However, we don't want to overstate the probability of large transformations. This expanded view of reading, Tierney and Pearson point out, is "almost contrary to some well-established goals readers proclaim for themselves (e.g., that efficient reading is equivalent to maximizing recall based on a single fast reading)" (p.42).

My point is based on a more limited claim about reading. Although it *may* at times work radical transformations on knowledge, even the smaller transformations are significant. The relatively straightforward process of reading for comprehension is a vigorously constructive, inventive act. It generates a selective, organized, and elaborated structure of ideas in memory--all in a normal day's work. If we look at that mental construction as a product, it is a rather impressive product. This product of comprehension wouldn't make a bad "essay" in some school settings if the student were asked to write it out. My point is that the process of comprehension is not only a robust, well-learned process, but in the hands of a student who has just negotiated twelve years of schooling, it can do much of the work reading-to-write calls for. It is capable of producing a structured, elaborated mental representation of meaning.

But comprehension alone is not an adequate explanation for this performance. To account for more of the success and fluency of these students we need to posit a somewhat more complex combination of goals and strategies, which I will call a comprehension/response strategy. In the class presentations and in the search for an organizing idea seen in the protocols, students make it clear that "getting a good idea" is at the heart of writing a short paper. Without one you are in danger of sounding unintelligent or boring, and you have nothing onto which to hook all the material you have just comprehended. School asks for intelligent, if brief responses. Bereiter and Scardamalia (1982) have shown how children build their early writing on the foundation of conversation, using the patterns of turn-taking and conversational response to manage their writing process. Generating an "acceptable" response, whether it is in conversation or in reply to questions, is a basic discourse skill these college freshmen brought to writing. We see this pattern of comprehension and response formalized in the standard high school assignment that asks the student to read a short passage, summarize it , and then write his or her own "opinion" as the final

paragraph. Of course, short papers and essay exams demand more than a conversational response. They ask the writer to stay on topic and to use some of the standard conventions of written text that maintain topical focus and that link adjacent sentences and paragraphs. And we saw in Report 3, the college students in this study often had firm control over many conventions of surface coherence--including introductory paragraphs, topic sentences, repeated referents and key words--even when that coherence was only skin deep.

What I am suggesting is that the comprehension/response strategy--really, this large happy family of strategies--is at the heart of the standard repertoire these students brought to college. Moreover, it can, by itself, account for *much* of the underlying cognitive process of reading-to-write. Now look at the situation from the learner's point of view: if comprehension and response, even in their relative straightforward forms, are central to so much of reading and writing in school, if they are robust, constructive processes that can give you a focused, developed set of things to say, and if they are processes you have learned to manage with some success, then why assume you need to do anything else? The answer, I believe, is that many students indeed see no reason to initiate changes in cognition. They approach these new academic writing tasks with a set of familiar goals and strategies that do appear to fit. And they are right--to a point. From a cognitive perspective, the comprehension/response process continues to stand at the center of reading-to-write. It is not replaced--it is only embedded in new goals. And that, perhaps, is what makes this transition tacit--what allows teachers to assume the difference is self-evident while students are not fully aware it exists.

Embedding the Comprehension/Response Strategy in a Rhetorical Plan

For all its virtues, a comprehension/response strategy is not geared to examining, testing, and transforming one's own knowledge. It does not push the reader/writer to take advantage of the "writerly" reading process Tierney and Pearson (1984) and Greene (in prep.) describe. The goals it sets and the strategies it draws on, like the TIA, are designed to tell one's current knowledge rather than transform it. This does not preclude insight, discovery, or reintegration, but the strategy is not designed to seek and nurture these actions.

Comprehension/response can handle some writing occasions with efficiency and flair. Unfortunately, the academic discourse community (as defined in this study) often expects student writers to transform their knowledge--not tell it--and to adapt it to new or special readers, by filling in gaps of implicit meaning, anticipating a reader's response, or imagining the reader's needs. In many classes, the writer must adapt, restructure, or synthesize knowledge in order to answer complex questions or write a paper which applies the student's reading and thinking to some larger issue in the field. If knowledge transformation is the cognitive trademark of academic discourse, speaking with authority and purpose is one of its social manifestations. Full-fledged members of this community are also expected to speak as contributors with the authority of their own thinking, guided by an intellectual or rhetorical purpose of their own making. When we perceive that an essayist's dominant purpose is to recite his or her reading or relate a response to it, we often ask, "But what is the point? Why are you telling me this?" We expect a rhetorical purpose--beyond the purpose of comprehension and response. And, as all writers know, discovering, shaping, and using that unique purpose to construct a text is one of the most demanding and creative acts of writing.

If a comprehension/response strategy can't meet all of these expectations--despite its constructive power and familiarity--what must the student do: abandon it, replace it,

move on to different or "higher" processes? The answer, we will argue, is not to abandon but to embed. Strategic knowledge is the ability to put old strengths to new purposes. Imagine the writer as a ballet dancer who has spent the last twelve years perfecting the basic movements of ballet: the 1st, 2nd, 3rd positions, the grand plie, the arabesque and so on. Eventually these movements are combined into exercises at the barre and across the room (like the "school exercises" in figure skating)--basic movements, requiring skill and dedication, which are never abandoned. However, when the dancer walks onto the stage as a performer in his or her own right, we expect a new thing. Those basic movements are *transformed* into dance and they are used, not for themselves, but to carry out the expressive, interpretive *purpose* of the dancer and the dance.

The dancer is a metaphor for the growth of a strategic, recursive process. The basic movements of ballet, like the intellectual moves of comprehension and response, are never left behind--they are the center and the heartbeat of any performance. But as student becomes performer, these moves become embedded in a process with expanded horizons and new goals. Just as sentences are embedded within sentences in linguistic recursion, complex intellectual acts are often embedded within the more complex hierarchy of a recursive cognitive process.

This picture of strategic development suggests natural and evolutionary change. And yet, sometimes a recursive, adaptive process--in which old strategies and abilities need to be put to new uses--may be the hardest change for a learner to see. Students may be caught in a tacit transition in which the cues to change are subtle, but their significance is far reaching. We want to explore the possibility that the context of college writing may offer such indirect cues that some students fail to perceive that a change in goals has occurred.

Building a Theory of the Task

Just as writers have to build an individual task representation of each new assignment, students entering college also appear to build what we will call a theory of the task for college writing. Although informal and often implicit , this more general "theory" emerges when freshmen talk about the questions many share (or the conclusions they have already reached): Is college writing really different from high school? Are each teacher's expectations idiosyncratic? Is writing in each discipline largely unrelated to the others? (see Report 9). Imagine this theory building process (which may itself be tacit, casual, shrewd, or conscious and desperate) from the students' point of view.

The Process of Theory Building. Like the stranger Burke (1941) describes who drifts into a knot of people in an ongoing conversation at a party and must infer the direction and the shape of the discourse she would enter, a student enters the ongoing conversation of academic writing. In doing so, the rules of the game she must infer are not only those of academic papers in general, but of the discipline and the individual class. Standing on the edge of the assigned conversation, the student must construct a theory of the task from available evidence. Like that of Burke's stranger, the student's "theory" making may well be intuitive and unexamined.

If we focus on the cognition of "theory making" (rather than on the patterns and conventions it invents) we might predict a scenario of the following sort. The student will, first of all, notice and even look for familiar clues in this situation that let her call on prior knowledge. Much of that knowledge will be organized as well-structured schemas (e.g., the "English theme" schema, which has slots for obligatory key features

such as format, style, and carries assumptions about the level of effort, and the place of one's own ideas) . The great cognitive convenience of such schemas, of course, is that when some part of the schema is triggered in the writer's memory, the whole organized structure becomes active. Using our prior schemas is at the heart of cognitive efficiency: hearing a few words of the conversation lets us quickly, almost automatically infer an entire web of meaning. However, depending on these prefabricated knowledge structures doesn't direct the perceiver's attention to the new or to modified features of a situation. In fact, like stereotypes and prejudice--which are another form of schema--they may suppress awareness of the facts that don't fit.

Familiar Features; Changing Goals. Imagine, then, the student, faced with constructing a theory of the task and bringing her previous experience with school writing to the job. How easy will it be for her to see new features or to recognize that familiar features have undergone a sea change?

On the surface, various sorts of academic and school writing have much in common. Standard features of "clear exposition" and organization, the conventions of introductions and conclusions, topic sentences and transitions, and the informational focus and transactional voice of such writing are so visible and reassuringly concrete that they may become defining features in the student's schema. Moreover, the standard organizing plans one learns in school--the personal response, the summary, the synthesis of outside sources--are still standard plans in all sorts of later college level and professional academic writing. But there is an important difference between doing a summary or synthesis for its own sake, as a genre so to speak, and embedding those forms in a piece of writing that has its own purpose within a community of readers. Experienced academic writers may *use* a summary to present two points of view or use a source-based synthesis to establish context or their own credibility; but those plans and their attending conventions of format and style are typically in the service of grander goals, larger motives--in short, they serve the writer's rhetorical purpose.

For the student, whom we left in the throes of constructing a theory of the task, this means that the main visible features of the task look remarkably unchanged. The classroom context, the teacher's concern with content, and the role of the paper as a tool in the grading process, all these are likely to fit a familiar schema for theme writing. ***What has changed most is not the apparent genre or conventions, but the goals. The goals of self-directed critical inquiry, of using writing to think through genuine problems and issues, and of writing to an imagined community of peers with a personal rhetorical purpose--these distinguish academic writing from a more limited comprehension and response.*** This is not to say that all college assignments pose this task, but many do (including the set of assignments designed by the Reading-to-Write teachers in order to highlight these goals (presented in McCormick, 1989)). These new goals are part of what makes the transition problematic. Moreover, college teachers may simply expect and reward such thinking (from the "good students") without ever articulating their criteria for such "college work." Without awareness of these goals it is also hard to make sense of many of the discourse conventions of academic papers, such as examining counter positions to achieve a balanced appraisal or using a literature review to define issues and establish credibility rather than to survey information (cf. Bazerman, 1985; Myers, 1985a).

This fuller form of academic discourse is not limited to college. When students are asked to make such a transition by high school teachers, the change in goals may be even more difficult to communicate without the social reinforcement for change and

the new authority college can confer. In either case this shift in goals may be faintly signalled by our assignments which offer only weak indicators that old schemas don't fit. In this scenario of transition, the signals may begin to accumulate in the form of paper grades and comments that seem to ask for something different (or only idiosyncratic?), while the evidence from which to construct a theory of the task and its new goals may still be indirect.

The Contextual Evidence for a Change in Goals. We should also consider the *nature* of the evidence the context supplies to our theory builders. Learning to "discourse" as a member of the academic community is, of course, related to some other unmistakable changes going on in a freshman's emotional and intellectual life. It typically coincides with a change in adult status. It has many parallels to the intellectual struggle with authority and the problem of relative values which William Perry describes (1968). The generative, purposeful process we hope to see in students as *writers* is not a gift teachers have the power to give; it is part of a larger hard-won authority students are achieving for themselves.

On the other hand, this potential for speaking with new authority *as a writer* may be a dimly perceived change when compared to the change in status that goes with graduating from being a high school "student" to being a college "man" or "woman." Even though that more public transition to intellectual and social independence can be a rocky one, it is clearly marked and modeled by society; the goals are quite visible to all. By comparison, the strategic transition we expect within a student's writing calls for a private and internal change--within a largely unaltered social context of students writing to and being graded by a professor. The need to assume authority calls for alterations in well-learned and heretofore successful habits of mind, rather than the acquisition of an obvious new skill, such as doing statistics. It calls for new goals that embed old means.

To make the matter more mysterious, transforming one's current knowledge and adapting it to a purpose are dynamic intellectual events: actions, not products. Because they refer to a process of mind, they are sometimes hard to demonstrate with written products, even with "before and after" versions of a text. And even then the learner must infer the process from the product; one can't observe knowledge transformation happening by reading "model" texts or see the shifting shape of a purpose in the making. Instructors try to overcome this problem when in conferences, they elicit, reify, and celebrate the student's own meaning making. But because this process is normally tacit, students are often not aware of their own constructive process. And even when a paper does succeed thanks to a transforming and purposeful act of mind, it is easy for students to assume that the paper succeeded because this time they possessed the "right" topic knowledge or were lucky to have a bright idea--but not because of any repeatable strategic process they could use again. Finally, our attempts to teach thinking processes in writing and other disciplines are still in their infancy. For all the sense of potential in this area, in strategic teaching, in cognitive apprenticeship, in critical thinking(cf. Jones, Palincsar, Ogle, & Carr, 1987; Collins, Brown, & Newman, in press) we have to remember that a tacit transition is the norm for strategic knowledge. Students are often expected to leap into a complex problem-solving process with little instruction or even acknowledgment that such a task is there.

This may seem to paint an overly bleak picture of this transition, since in fact many students confront the change in expectations, feel the confusion of entry, but do eventually come to construct a workable theory of the task of academic writing. On the other hand many students may succeed in college courses with comprehension and response and never cross this particular threshold as writers, and others find college

writing an enigmatic, even pointless, business. The task representation our students need to construct is not the theory of an easy task. A richer representation will not make the hurdles go away. But, this study suggests, we might give students more authority over this transition by dealing more directly with *the strategic knowledge --the goals , strategies, and awareness*--that support the construction of academic discourse.

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